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tactilely readable areas of the overlay can be interpreted based upon what display is currently on screen. For example, the raised area portion could be associated with a feature determining paper size function if placed on one display, and duplexing if placed on another display. Audio signals could inform the user which display was on the screen. The raised area portion would communicate both possible meanings to the user, and the audio signal produced when a new display appeared on the screen would let the user know the context in which the overlay was being used.

In other embodiments, each of the tactilely readable areas of an overlay corresponds to distinct features. Single overlay embodiments are especially, but not solely, useful where a user will only be using a few displays or where the task being accomplished only requires a few user actions to enter the necessary information. The overlay also would not necessarily have to have all the features from every display. For example, many scanning and printing devices have esoteric features that a majority of users do not use. Those features can be left off the overlay. A simple overlay that includes the most commonly required features of several displays could suffice for most of the people most of the time.

FIG. 6 shows a schematic drawing of an example of such an overlay 20. The overlay 20 of FIG. 6 is set up for the particular task of scanning a set of printed pages, and having the scanned images deposited in a network repository that the user could access from a computer. FIGS. 7–10 show the displays (32, 36, 42, 46) with which the overlay 20 is used. The five tactilely readable areas (22, 24, 26, 28, 30) on the overlay 20 correspond to features on the displays in FIGS. 7–10. FIGS. 7–10 represent several GUIs from a Document Centre 265ST machine. The embodiments shown in FIGS. 7–10 are meant to be exemplary and should not be considered limiting in any manner. Area 22 corresponds to the Network Scanning feature 34 of display 32 shown in FIG. 7. Area 24 corresponds to the default feature 38 in FIG. 8. Area 26 corresponds to the image adjustment tab 40 in FIG. 8. Area 28 corresponds to the feature labeled “Sides Scanned” 44 of FIG. 9. Area 30 corresponds to the “2 Sided” feature 48 of FIG. 10. More tactilely readable areas can be created on the overlay 20 to further increase its usefulness.

In embodiments, the overlay 20 can be used for multiple purposes as is. For example, someone using a document handler having a default display on its screen such as the display 32 shown in FIG. 7 first places the overlay 20 over the display 32. If, for example, the user wants to scan a simplex document to a file, the user loads the document into a document feeder. The user then runs her fingers across the surface and reads the information on the overlay 20. The user determines the location of the area 22 over Network Scanning 34 and presses it causing the display 32 to change to the display 36 shown in FIG. 8. The user then finds and presses the area 24 corresponding to the default feature 38 in FIG. 8. Then the user presses the start button (not shown). This scans a simplex document to file. To scan a duplex document to file the user presses the areas (22, 24) in the same order. However, the user then proceeds to press the area 26 corresponding to the image adjustment tab 40 of FIG. 8. This causes the display 42 shown in FIG. 9 to be shown on the screen of the device. The user then presses the area 28 corresponding to the sides scanned button 44. This causes the display 46 shown in FIG. 10 to be shown on the screen of the device. The user then presses the area 30 corresponding to the 2 Sided feature 48 in FIG. 10. Finally, the user presses the start button. This causes the machine to scan a duplex document to file.

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In embodiments, audio prompts can still be used to notify the user when the display on the screen changes. The prompts would simply alert the user as to what was being displayed on the screen.

In embodiments, the tactile information conveyed by the areas may inform the user of the feature to which it corresponds. For example, in the embodiment shown in FIG. 7, area 22 may tell the user that the feature beneath it is “Network Scanning”. For this case, the user would typically be instructed in advance on what areas or tabs need to be pressed to print a document to file. However, in other embodiments, the area 22 may indicate other useful information. For example, area 22 may simply convey to the user the number “1” to indicate that it is the first area in a sequence to be pressed. For this case, the user could also be instructed in advance on what areas or tabs need to be pressed to print a document to file. For example, the user could be instructed to press buttons 1–5 in that order to scan a duplex document to file.

In embodiments, an overlay could be designed for a particular function or functions. In embodiments, overlay 20 can include a touch readable identifying mark or label 31 as shown in FIG. 6. The label would include information telling the user what function(s) can be accomplished with that particular overlay. The mark 31 could, for example, identify the overlay 20 as for use when scanning simplex or duplex documents to file. For overlays used a single task, the areas on it would simply need to indicate the order in which to press them. A user would simply press area 1, then area 2, etc., in order to complete a particular task, with no need for specific instruction. The user would read find the overlay for a task and press the buttons in order. Audible feedback could still be used to signal that the display on the screen has changed, where the displays do not change instantaneously. Alternatively, for overlays that can be used for more than one specific task (such as the one illustrated in FIG. 6), the mark 31 could convey that the overlay was for a group of tasks such as, for example, scanning simplex and duplex documents to file for the embodiment disclosed in FIG. 6. For instance, one overlay could be used for scanning to print a document, and a second overlay could be used for scanning to a file. A stack of overlays, each being used for a particular activity or range of activities, could be set beside a device. The tactilely readable label, like those discussed before, would identify the purpose for using the overlay.

Tactile overlays can also be used for non-touch sensitive screens having GUI displays thereon. Transparent overlays having tactile information thereon can be used with GUI displays so that visually impaired people can read the information on the screen. The user can, for example, use a standard keyboard to enter instructions or information into the device. For example, a visually impaired user may approach an electronic device, such as a computer, having a screen that has a base or initial display thereon. The user would use the corresponding overlay to read the first display. The user could then enter instructions and cause a new display to appear. If the displays always appear in the same order, the user may select the overlay that corresponds to the next display in sequence. Alternatively, an auditory signal may be used to inform the user which display is being displayed. The visually impaired user would put up the overlay corresponding to the audio signal received. A visually impaired user could read the new overlay and enter more instructions or information as required. If the person entering instructions or information is not adept at typing, he can use a keyboard overlay having tactile information such as Braille characters corresponding to keys on the keyboard.